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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NG, CHRISTINE Y	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/029,929	BYSTED ET AL.	
	Examiner	Art Unit	
	CHRISTINE NG	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,14-16 and 21-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,14-16 and 21-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2002 and 21 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/11/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-8, 14, 15, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,850,540 to Peisa et al in view of U.S. Publication No. 2002/0054583 to Olesen et al.

Referring to claims 1 and 21, Peisa et al disclose in Figure 3 a method of transmitting a radio signal. The method comprises:

Implementing a protocol stack (Figure 3) having at least a physical layer (physical channel 330) and a medium access control layer (MAC entity 320). Refer to Column 6, lines 41-65.

The medium access control layer directing data from an application to a plurality of transport channels (transport channels 325), in which the application data belongs to a plurality of classes (quality of service QoS) for which different qualities of service are required, and the transport channels to which the data is directed being selected in accordance with the classes to which the data belongs. Peisa et al disclose a method of "packet scheduling in accordance with quality of service (QoS) constraints for data flows in communications systems", wherein the MAC layer "schedules packets transmission of various data flows to meet stipulated criteria, including permitted

transport format combinations (TFCs) from a TFC set (TFCS)" (Column 2, lines 48-67). Each transport channel 325 is assigned TFC from a TFCS according to the guaranteed rate transmission rates, QoS, transport block set size, etc. As shown in Figure 4, data flows are sent over a transport channel according to the TFC (step 435). Refer to Abstract; Column 6, line 66 to Column 8, line 2; Column 10, lines 29-56; and Column 17, line 48 to Column 18, line 18.

Generating a respective processing scheme (TFC) for processing data in each transport channel, in which the transport channel processing schemes are selected and combined in dependence upon the source application, from which the data is directed. The TFC processing scheme specifies transmission parameters so that "the total QoS provided to the end user fulfills the guarantees given when the corresponding RAB was established" and to fulfill the requirement that "each flow receive the agreed-upon QoS" (Column 13, lines 34-39). Furthermore, the system guarantees "guaranteed bit rates to services having different QoS classes", and that in particularly, "higher (or highest) QoS classes are preferably given their respective guaranteed rates" (Column 17, line 66 to Column 18, line 18).

Multiplexing the transport channels to provide a physical layer signal. "The transport channels 325 are not independent of one another, and are later multiplexed onto a single physical channel 330 at the physical layer 330..." (Column 7, lines 27-29)

A code (TFCI) identifying the combined transport channel processing schemes. A Transport Format Combination Indicator (TFCI) identifies a corresponding TFC. Refer to Column 7, line 61 to Column 8, line 2.

Peisa et al do not disclose that the code is included in said physical layer signal.

Olesen et al disclose in Figure 1 that a TFCI 15 and 17 is included in a physical layer signal frame. TFCI bits store the information bits associated with transport sets and instruct the receiver as to how the data is partitioned within the communication burst 10. The TFCI provides coordination between the transmitter and receiver. Refer to Sections 0010-0011. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the code is included in said physical layer signal. One would be motivated to do so so that the receiver can determine the transmission parameters from the TFCI in order to properly decode the received information.

Referring to claim 2, Peisa et al do not disclose that said physical layer signal comprises a TDMA signal and said code is transmitted in predetermined locations.

Olesen et al disclose in Figure 1 that the physical layer signal is a TDMA signal and the code (TFCI) is transmitted in predetermined locations (adjacent to the midamble). The frame can be used in a TDMA system. Refer to Sections 0002 and 0010-0011. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that said physical layer signal comprises a TDMA signal and said code is transmitted in predetermined locations. One would be motivated to do so so that the receiver can locate the TFCI information in certain locations of the frame and then properly decode the received information using the transmission parameters.

Referring to claim 3, Peisa et al do not disclose that said code is distributed across a plurality of bursts.

Olesen et al disclose in Figure 1 that the code (TFCI) is distributed across a plurality of bursts. Each burst contains TFCI bits to store the information about the transport sets and to instruct the receiver as to how the data is partitioned within the communication burst 10. The TFCI provides coordination between the transmitter and receiver. Refer to Sections 0010-0011. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that said code is distributed across a plurality of bursts. One would be motivated to do so so that the receiver can locate the TFCI information in certain locations of the frame and then properly decode the received information using the transmission parameters.

Referring to claim 4, Peisa et al disclose an apparatus (Figure 2, UE 110) comprising:

A controller configured to at least partially implement a protocol stack (Figure 3) having at least a physical layer (physical channel 330) and a medium access control layer (MAC entity 320) for directing data from an application to a plurality of transport channels (transport channels 325), in which the application data belongs to a plurality of classes (quality of service QoS) for which different qualities of service are required, and wherein the transport channels to which the data is directed are selectable in accordance with the plurality of classes to which the data belongs, and multiplexable to produce a physical layer signal, each transport channel being processable in accordance with a processing scheme (TFC) for processing data in each transport

channel, in which transport channel processing schemes are arranged selectable and combinable in dependence upon the application, from which the data is directed; wherein the controller is configured to include a code (TFCI) identifying the combined transport channel processing schemes in said physical layer signal. Refer to the rejection of claims 1 and 21.

Referring to claim 5, refer to the rejection of claim 2.

Referring to claim 6, refer to the rejection of claim 3.

Referring to claim 7, refer to the rejection of claim 1. The MAC layer (Figure 3, MAC entity 320) "has to decide how much data to transmit on each transport channel 325 connected to it" (Column 7, lines 25-27). Furthermore, the method of selecting TFC's shown in Figure 4 is performed by MAC entity 320. Refer to Column 7, lines 25-60; and Column 10, lines 29-56.

Referring to claim 8, refer to the rejection of claim 1. A physical layer (Figure 3, physical channel 330) is connected for use with the MAC layer (Figure 3, MAC entity 320). Refer to Column 6, lines 41-65.

Referring to claim 14, refer to the rejection of claim 4. The radio transmitter (Figure 2, UE 110) comprises a MAC layer (Figure 2, MAC-c and MAC-d). Refer to Column 4, lines 20-47. The MAC layer (Figure 3, MAC entity 320) "has to decide how much data to transmit on each transport channel 325 connected to it" (Column 7, lines 25-27). Furthermore, the method of selecting TFC's shown in Figure 4 is performed by MAC entity 320. Refer to Column 7, lines 25-60 and Column 10, lines 29-56.

Referring to claim 15, refer to the rejection of claim 4. The radio transmitter (Figure 2, UE 110) comprises a physical layer (Figure 2, PHY). Refer to Column 4, lines 20-47. A physical layer (Figure 3, physical channel 330) is connected for use with the MAC layer (Figure 3, MAC entity 320). Refer to Column 6, lines 41-65.

Referring to claim 23, Peisa et al disclose in Figure 3 a method of transmitting a radio signal. The method comprises:

Implementing a protocol stack (Figure 3) having at least a physical layer (physical channel 330) and a medium access control layer (MAC entity 320), the medium access control layer directing data from at least one application to a plurality of transport channels (transport channels 325). Refer to Column 6, lines 41-65.

Generating a respective processing scheme (TFC) for processing data in each transport channel. The TFC processing scheme specifies transmission parameters so that "the total QoS provided to the end user fulfills the guarantees given when the corresponding RAB was established" and to fulfill the requirement that "each flow receive the agreed-upon QoS" (Column 13, lines 34-39). Furthermore, the system guarantees "guaranteed bit rates to services having different QoS classes", and that in particularly, "higher (or highest) QoS classes are preferably given their respective guaranteed rates" (Column 17, line 66 to Column 18, line 18).

Multiplexing the transport channels to provide a physical layer signal. "The transport channels 325 are not independent of one another, and are later multiplexed onto a single physical channel 330 at the physical layer 330..." (Column 7, lines 27-29)

A code (TFCI) identifying the transport channel processing schemes, the processing schemes being selected and combined in dependence upon the application from which the data is directed. A Transport Format Combination Indicator (TFCI) identifies a corresponding TFC. Refer to Column 7, line 61 to Column 8, line 2. Refer to the rejection of claims 1 and 21.

Peisa et al do not disclose that the code is included in said physical layer signal.

Olesen et al disclose in Figure 1 that a TFCI 15 and 17 is included in a physical layer signal frame. TFCI bits store the information bits associated with transport sets and instruct the receiver as to how the data is partitioned within the communication burst 10. The TFCI provides coordination between the transmitter and receiver. Refer to Sections 0010-0011. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the code is included in said physical layer signal. One would be motivated to do so so that the receiver can determine the transmission parameters from the TFCI in order to properly decode the received information.

3. Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,850,540 to Peisa et al in view of U.S. Publication No. 2002/0054583 to Olesen et al, and in further view of U.S. Publication No. 2002/0164980 to Eriksson et al.

Peisa et al do not disclose that the processing schemes are specified at call set-up when the radio signal is for use in a mobile communications systems.

Eriksson et al disclose in Figure 2 a radio transceiver that includes a transport format combination storage device 14 that stores a plurality of transport format combination sets corresponding to a plurality of different calls. The TFCS descriptors are provided during call set up, with the call information 27. An assembler 16 uses a TFCI to index each of the transport format combinations in the storage device 14, and uses a call ID index the desired transport format combination set in device 14. Refer to Section 0057 and 0065. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the processing schemes are specified at call set-up when the radio signal is for use in a mobile communications systems. One would be motivated to do so so that the appropriate transmission parameters specified by the TFC and corresponding to a specific call can be used for the call.

4. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,850,540 to Peisa et al in view of U.S. Publication No. 2002/0054583 to Olesen et al, and in further view of U.S. Publication No. 2002/0027897 to Moulsley et al.

Refer to the rejection of claims 1 and 21. Futhermore:

Peisa et al do not disclose selecting a modulation technique to be applied to the physical layer signal for transmission, wherein the processing scheme is dependent on the modulation technique.

Moulsley et al disclose that a station can send modulation scheme selection commands to another station in the TFCI field carried on the communications link. Modulation schemes for transmission can include 64-QAM, 16-QAM or 8-PSK. Refer to

Section 0018, 0098 and 0110. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include selecting a modulation technique to be applied to the physical layer signal for transmission, wherein the processing scheme is dependent on the modulation technique. One would have been motivated to do so to notify the transmitting and receiving sides of the modulation technique used in order to demodulate the data.

Response to Arguments

5. Applicant's arguments filed June 2, 2008 have been fully considered but they are not persuasive.

Referring to the argument of claims 1-8, 14, 15, 21 and 23 (page 6, line 17 to page 7, line 24): Peisa et al disclose selecting a TFC in dependence upon the application from which data is directed. As shown in Figure 8, several parameters including QoS class, guaranteed rate, and queue fill level are obtained for each TFC of each logical channel (step 805). A score is then determined (steps 810 and 815) and a TFC is chosen (step 820). Figure 8 "ensures that if there is a TFC that transmits at least the guaranteed rate for each flow, then that TFC is chosen" (Column 19, lines 11-13). Figure 8 also "attempts to maximize the amount of data being transmitted from the highest QoS class(es)" (Column 19, lines 13-15), since flows with the higher QoS classes are guaranteed their respective guaranteed rates. Refer to Column 17, line 66 to Column 19, line 17. Therefore, depending on the nature (QoS) of the application, a certain TFC for a certain logical channel is chosen to transport that application. Peisa et al disclose that selecting a TFC is based upon the RABs and their QoS (Column 5, lines

8-10 and Column 8, lines 48-51). However, as shown in Figure 3, RABs 305 make available radio resources and services to user applications (Column 6, lines 41-44).

Referring to the argument of claim 22 (page 8, line 16 to page 9, line 8): Moulsley et al disclose that a station can send modulation scheme selection commands to another station in the TFCI field carried on the communications link. Modulation schemes for transmission can include 64-QAM, 16-QAM or 8-PSK. Different applications with different QoS require different modulation schemes. For example, some forms of modulation, such as QPSK, are more robust than other forms of modulation, such as 64-QAM, and can be used on different applications accordingly. Refer to Section 0018, 0098 and 0110.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C. Ng
August 12, 2008

/FIRMIN BACKER/
Supervisory Patent Examiner, Art Unit 2616